WHAT IS CLAIMED:

1. An artificial limb for an amputee who has a residual limb comprising:

a means for receiving a portion of a residual limb of an amputee;

a means for supporting the weight of the amputee when the residual limb is received within the receiving means;

a means for applying vacuum to the residual limb when the residual limb is received within the receiving means;

a means for reducing loss of vacuum against the residual limb during a weight-bearing phase of walking by the amputee; and

a means for reducing loss of vacuum against the residual limb during a non-weight bearing phase of walking by the amputee.

2. The artificial limb of claim 1, wherein the supporting means comprises a prosthetic foot.

3. The artificial limb of claim 1, wherein the means for applying vacuum comprises a vacuum pump.

4. The artificial limb of claim 1, wherein the means for applying vacuum comprises a vacuum reservoir.

5. The artificial limb of claim 1, wherein the receiving means comprises a socket.

6. The artificial limb of claim 1, wherein the means for reducing loss of vacuum comprises a seal.

7. The artificial limb of claim 1, wherein the means for reducing loss of vacuum comprises a suspension sleeve.

8. The artificial limb of claim 1, wherein the means for reducing loss of vacuum comprises a means for maintaining vacuum during both the weight-bearing and non-weight bearing phases of walking by the amputee.

9. The artificial limb of claim 8, wherein the means for maintaining vacuum comprises a vacuum pump adapted to regulate a level of vacuum against the residual limb.

10. An artificial limb for an amputee who has a residual limb comprising:

a flexible liner adapted to encase a portion of a residual limb

a single, substantially rigid socket configured to receive the residual limb encased in the liner and to form a cavity between the liner and the socket;

a support member coupled to the socket, the support member adapted to provide support for the weight of the amputee when the residual limb is received within the socket;

a seal member adapted to seal the cavity between the liner and the socket; and

a vacuum source fluidly coupled to the cavity between the liner and the socket, the vacuum source configured to apply a designated vacuum pressure evenly over the liner encasing the residual limb so as to securely couple the artificial limb to the residual limb and to maintain the designated vacuum pressure within desired limits during use of the artificial limb by the amputee.

11. The artificial limb of claim 10, wherein the support member comprises a prosthetic foot.

12. The artificial limb of claim 10, wherein the vacuum source comprises a vacuum pump.

13. The artificial limb of claim 12, wherein the vacuum pump comprises shock absorption.

14. The artificial limb of claim 12, wherein the vacuum pump is weight actuated.

15. The artificial limb of claim 10, wherein the vacuum source comprises a vacuum reservoir.

16. The artificial limb of claim 10, wherein the seal member comprises a suspension sleeve.

17. The artificial limb of claim 10, wherein the seal member is formed integral with the flexible liner.

18. A method for managing volume loss in a residual limb of an amputee when wearing an artificial limb, the method comprising the steps of:

encasing a portion of a residual limb in a flexible liner;

inserting the encased residual limb into a single, substantially rigid socket of an artificial limb and thereby forming a cavity between the liner and the socket, the socket adapted to be coupled to a structure capable of supporting and facilitating walking by the amputee;

sealing the cavity;

supplying vacuum to the cavity so as to apply vacuum pressure evenly over the liner encasing the residual limb; and

maintaining vacuum within the cavity during both a weight-bearing phase of walking by the amputee and a non-weight bearing phase of walking by the amputee.

19. The method of claim 18, wherein the step of maintaining vacuum comprises reducing the loss of vacuum within the cavity.

20. The method of claim 18, wherein the step of sealing the cavity comprises placing a suspension sleeve over a portion of the residual limb and over a portion of the socket.